

REMARKS

I. Claim Amendment

Claims 1 and 5 have been amended to claim a liquid crystal display. Support for the amended Claims 1 and 5 may be found throughout the application, in particular in paragraphs [0041], [0050], [0051], and [0056].

New Claims 50 and 51 recite that the two or more layers of microcups are sandwiched between two conductor films. Support for the new claims can be found for example, in paragraph [0074] and Figures 3a and 3b of the application.

Other claims were amended for clarity only.

No new matter is added in any of the amendments.

The Examiner is requested to enter the amendment and reconsider the application.

II. Claim Objections

Claims 1-18 are objected to because of informalities.

Applicants have amended Claims 1, 5, 10 and 14 to replace the word "thermoplastics" with --thermoplastic--.

III. Claim Rejections – 35 USC §112, Second paragraph

Claim 3 is objected to for insufficient antecedent basis.

Applicants have amended Claim 1 to recite a "microcup" composition.

IV. Claim Rejections - 35 USC §102 (b)

Claims 1-7 and 9 are rejected under 35 USC 102(b) as being anticipated by Thomas (US Patent No. 4,798,849).

Claims 1 and 5 have been amended. Claims 1 and 5 are now directed to a liquid crystal display with specific features – the microcups (as display cells) are formed from a composition as recited and the microcups are filled with a liquid crystal composition.

Thomas et al only disclose dissolving or dispersing a liquid crystalline polymer into a bulk polymer. The reference does not mention a liquid crystal display, let alone a liquid crystal display as claimed in Claim 1 or 5.

Accordingly, the amended Claims 1 and 5 and their dependent claims are not anticipated by Thomas et al.

V. Rejections Repeated

Claims 5-9 and 14-17 were rejected under 35 USC 103(a) as allegedly being obvious over Morita et al (US Patent No. 6,400,492) in view of Oguchi et al (US Patent No. 6,650,384).

Claims 5-9

(a) Morita et al do not teach or suggest the combined use of a thermoplastic, thermoplastic or a precursor thereof and a speed enhancing comonomer or oligomer.

Morita et al disclose an electrophoretic display liquid medium. Morita et al mention a variety of matrix materials (from column 15, line 49 to column 16, line 64). At column 16, lines 3-6, two types of materials, thermosetting resins and resins are mentioned.

Thermosetting resins, according to Morita et al, are polymers or polymerizable compounds having functional groups which react with themselves or a crosslinking agent upon application of heat to form covalent bonds, resulting in formation of a crosslinked structure. A list of specific examples of polymers and polymerizable compounds is given at lines 14-24.

Resins, according to Morita et al, may include photo-polymerizable monomers. A list of photo-polymerizable monomers, including poly(ethylene glycol) diacrylate mentioned by the Examiner, is given at lines 35-47.

However, Morita et al do not teach or suggest the combined use of a thermoplastic, thermoplastic or a precursor thereof and a speed enhancing comonomer or oligomer.

(b) Morita et al do not teach or suggest a liquid crystal display comprising microcups as display cells.

Morita et al disclose a non-liquid crystal electrophoretic display that includes microcapsules as display cells. For example, the reference discloses that the display liquid may be microencapsulated by any one of the known methods such as in-situ methods, interfacial polymerization methods, coacervation methods and the like (see column 15, lines 30-43). Morita et al further disclose that the display liquid may include matrix materials. As a result, the matrix

material may include a display liquid and/or microcapsules containing a display liquid (see column 15, lines 44-48). The microcapsules do not have a sealing layer.

Morita et al do not teach or suggest microcups as display cells. The microcups of Claim 5 are first formed from a composition comprising a thermoplastic, a thermoset or a precursor thereof and a speed enhancing comonomer or oligomer; then filled with a liquid crystal composition, and finally sealed with a sealing layer.

(c) Morita et al do not teach or suggest a liquid crystal display having liquid crystals as a display fluid.

Morita et al do not teach display cells comprising microcups filled with a liquid crystal composition.

Oguchi et al disclose a liquid crystal display and display method. This reference does not cure the deficiency of Morita et al because it does not suggest either microcups or the combined composition of a thermoplastic, a thermoset, or a precursor thereof and a speed enhancing comonomer or oligomer.

Therefore, the 35 USC 103(a) rejection of Claims 5-9 should be withdrawn.

Claims 14-17

Claims 14-17 are directed to a liquid crystal display comprising two or more layers of microcups and the microcups being formed from a composition comprising a thermoplastic, a thermoset or a precursor thereof and a speed enhancing comonomer or oligomer. The discussion discussed above of Morita et al and Oguchi et al is also applicable to Claims 14-17. In addition, none of the references discloses or suggests two or more layers of display cells.

Accordingly, the 103(a) rejection of Claims 14-17 should be withdrawn.

Claim 18

Claim 18 is rejected under 35 USC 103(a) as being allegedly unpatentable over Morita et al in view of Oguchi et al as applied to Claims 5-9 and 14-17 and further in view of Schmidt (CA 2340683)

Claim 18 is directed to a liquid crystal display comprising two or more layers of microcups, wherein the two or more layers of microcups are arranged in a

staggered manner.

Applicants' arguments above also apply to Claim 18. In addition, none of Morita et al, Oguchi et al and Schmidt discloses a display device having two or more layers of display cells, let alone that the displays cells are arranged in a staggered manner.

In paragraph [0021], the term "staggered" is defined as an arrangement that inactive partition areas of one layer are at least partially overlapped with the active areas of the layer **above or underneath**. Because "staggered" is defined in the specification, its definition applies to the claim. Applicants respectfully disagree with the Examiner that the above-or-underneath features are not recited in Claim 18 because such features are inherent in view of the definition. Schmidt clearly does not describe the "staggered" arrangement.

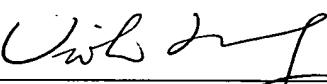
Accordingly, the 103(a) rejection of Claim 18 should be withdrawn.

CONCLUSION

Applicants believe that the application is now in good and proper condition for allowance. Early notification of allowance is earnestly solicited.

Respectfully submitted,

Date: September 30, 2005



Viola T. Kung (Reg. No. 41,131)

HOWREY LLP
2941 Fairview Park Drive, Box 7
Falls Church, VA 22042
Tel: (650) 463-8181
Fax: (650) 463-8400